

# **GYTS Country Report**

## **Slovakia, 2003**

*Prepared by GYTS Slovakia, 2003, Collaborative Group\**

### **Introduction**

Smoking is the most important cause of premature death and loss of health in developed countries. In countries, where smoking has been common, smoking is estimated to cause over 90% of lung cancer in men and about 70% of lung cancer among women. In addition, in these countries, the attributable fractions are 56-80% for chronic respiratory diseases and 22% for cardiovascular disease. Worldwide, it is estimated that tobacco causes almost 9% of all deaths (20). In European region one half of all people who regularly smoke die from tobacco-related diseases, half in middle age and half in old age. Situation in former communist European countries is particularly urgent. Middle-aged men here are in two times higher risk of death from tobacco-related disease than men in Western Europe. It is predicted that, unless effective measures are implemented, tobacco products will be responsible for 2 million deaths each year by 2020 (8, 21).

In Slovakia, according to the latest survey from 2002, 30.1 % of men and 17.0 % of women regularly smoke (7). Previous surveys, carried out within last 10 years, showed increase of smoking among women. Among university medical students in Slovakia, the most apparent change during the period 1995-1999 was the dramatic increase in occasional smoking among women. This finding reflects progressively increasing social tolerance of women' smoking, representing a potential public health problem deserving attention in our preventive measures (1, 2).

Another specific feature of the Slovak population is a high level of heterogeneity in overall mortality in its regions and districts. This may be caused by several reasons. Some of the most likely ones include different educational structure and various cultural and ethnic influences (4, 14). In designing of population surveys, the heterogeneity should be taken into account and in preventive measures specifically tailored strategies should be used in each region.

### ***Tobacco control legislation in Slovakia***

Tobacco use in Slovakia is regulated by several legislation norms. Among them, the most important are:

The Act No. 67/1997 Coll. on Protection of Non-smokers (§6, par. 1) regulates the sale of tobacco products. According to this norm, tobacco products are forbidden to be sold in specialised groceries and shops with goods determined to children and youth; in all types of health service facilities, school facilities, schools and social care facilities for children and youth; in automatic machines and collected on delivery; and in a package of less than 10 pieces.

The Act No. 147/2001 of April 2 on Advertising and on Amending and Supplementing prohibits the advertising of tobacco products by § 6 par. 1 on all types of information carriers; through free distribution of tobacco products samples to the public; and on advertising items, which are not related to smoking and are distributed to the public, with the exception of advertising issues, which are distributed at points of sale.

The Act No. 308/2000 on Transmission and Retransmission regulates the tobacco products advertisement in TV within the transmission under the Section 33, letter 1: The transmission of all forms of advertisement and teleshopping for tobacco products is forbidden. Evading this ban by means of the use of brand names, trademarks, emblems or other clear signs of such products in the broadcasting time selected for advertisement and teleshopping is forbidden.

As for sponsoring, the Slovak legislation currently does not specifically regulate the issue of sponsoring directly by the law.

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*\*See end of the report for details of GYTS Slovakia, 2003, Collaborative Group*

### ***Goals of the Global Youth Tobacco Survey (GYTS)***

According to numerous studies, onset of a smoking habit and attitudes towards tobacco have roots in early childhood and preventive action should be implemented as soon as possible. To develop an effective strategy, epidemiological data on smoking habit and smoking-related factors among school children are essential. Keeping this in mind, the Tobacco Free Initiative (TFI), World Health Organization (WHO) and the Office on Smoking and Health (OSH), Centers for Disease Control and Prevention (CDC) have developed the Global Youth Tobacco Survey. The GYTS project was launched in 1999 and until now has been completed in 97 countries, 16 of them in Europe. Via self-administered questionnaire GYTS monitors information on prevalence of tobacco use and its initiation, attitudes, knowledge and behaviours related to tobacco use, environmental tobacco smoke (ETS) exposure, minors' access to tobacco products, role of advertisement and mass media campaigns as well as prevention curricula in schools. Target group of the survey is adolescents aged 13-15 years. The information obtained from the survey is of a great importance in planning of effective measures in tobacco control among young people.

In Slovakia, GYTS was carried out on the turn of 2002 and 2003 and was administrated by the Jessenius Faculty of Medicine, Comenius University in Martin in co-operation with Faculty of Social Work and Health, Trnava University, Medical Faculty of the P.J. Safarik University in Kosice, State Health Institute in Banska Bystrica, Faculty of Humanities and Natural Sciences, University of Presov, State Faculty Health Institute in Bratislava and WHO Liaison Office in Slovakia, Bratislava.

### **Material and methods**

The GYTS Slovakia is a school-based survey, which employed a two-stage cluster sample design to produce a nationally representative sample of elementary school pupils in grades 7, 8 and 9. As a first stage, 60 elementary schools have been selected proportionally to size (larger schools had the larger probability to be selected) including sub-samples representing eight regions of Slovakia: Bratislava (including the Capitol), Trnava, Trencin, Nitra, Zilina, Banska Bystrica, Presov and Kosice. List of elementary schools and enrollement data were obtained from the Office of School Information and Prognosis, Ministry of Education.

The second sampling stage consisted of systematic equal probability sampling (with a random start) of classes from each school that participated in the survey. All classes in the selected school were included in the sampling frame. All pupils in the selected classes were eligible to participate in the survey.

A weighting factor was applied to each student record to adjust for non-response and for the varying probabilities of selection. For the GYTS Slovakia 4,594 sampled students completed usable questionnaires. The school response rate was 98.3%, and the pupil response rate was 87.4%. The overall response rate was 85.9%. SUDAAN and Epi Info were used to compute 95% confidence intervals for the estimates. The sampling and descriptive summarising of data were done in CDC, Atlanta.

Survey procedures were designed to protect the students' privacy by allowing for anonymous and voluntary participation. For each region a field administrator has been designated. Standard GYTS questionnaire adopted for Slovakia and containing 89 questions has been used. The survey was administered in the classrooms. Pupils were informed by field administrators about the purpose of the survey and about an appropriate way how to administrate the survey. Filled answer sheets were scanned by computer and analysed. The fieldwork was done from December 2002 to January 2003. Statistical tests for difference were determined by comparing the range of 95% confidence intervals for each estimate, at the  $p=0.05$  level.

## Results

### *Prevalence of smoking and use of tobacco*

Table 1A: Percent of students who smoke cigarettes, SLOVAKIA, GYTS, 2003

Category	Ever Smoked Cigarettes, Even One or Two Puffs	Age of Initiation <10, Ever Smoked Cigarettes	Current Use	Current Cigarette Smokers who Smoke:	
			Cigarettes -- Total	Hand-rolled cigarettes	Manufactured cigarettes
<b>Total</b>	64.3 (±2.2)	29.3 (±2.5)	24.3 (±2.0)	19.0 (± 3.3)	92.6 (± 2.2)
<b>Sex</b>					
Boy	69.9 (±2.3)	35.9 (±3.2)	25.5 (±2.8)	21.4 (± 5.0)	92.3 (± 3.1)
Girl	58.0 (± 3.1)	21.2 (± 3.4)	22.5 (± 2.2)	15.1 (± 3.9)	92.5 (± 2.5)
<b>Region</b>					
Trnava	60.8 (± 4.4)	32.4 (± 4.7)	21.0 (± 4.3)	9.7 (± 1.8)	91.6 (± 5.6)
Zilina	69.1 (± 6.9)	27.3 (± 7.3)	29.0 (± 9.7)	19.8 (± 4.4)	91.3 (± 6.2)
Trencin	62.0 (± 4.4)	34.5 (± 5.3)	22.6 (± 6.4)	18.6 (± 3.7)	96.0 (± 3.3)
Nitra	62.8 (± 4.4)	38.4 (± 6.8)	26.5 (± 2.3)	24.4 (± 15.1)	90.6 (± 8.3)
Presov	67.6 (± 5.6)	27.1 (± 7.7)	28.0 (± 3.8)	22.5 (± 6.4)	91.6 (± 6.4)
Bratislava	63.2 (± 10.2)	20.2 (± 6.3)	25.3 (± 7.2)	6.4 (± 2.1)	96.9 (± 5.3)
B. Bystrica	65.1 (± 4.3)	25.6 (± 4.8)	23.8 (± 4.7)	19.0 (± 10.6)	93.3 (± 5.0)
Kosice	61.2 (± 9.3)	29.5 (± 4.8)	17.1 (± 3.1)	24.5 (± 12.1)	91.4 (± 5.0)

Almost two thirds of respondents reported having ever-smoked cigarettes (64.3%), while boys (69.9%) significantly higher than girls (58.0%) (Table 1A). Almost 40% of boys initiated their smoking before age of 10, while in girls it was only about 21%. Significantly fewer pupils initiated smoking before age 10 in Bratislava compared to Nitra, Trencin and Trnava Regions and Banska Bystrica compared to Nitra. Almost one in four (24.3%) pupils currently smoke cigarettes. Current smoking was significantly lower in Kosice compared to Nitra and Presov regions. Current smokers predominantly used manufactured cigarettes (92.6%) with less than one fifth reporting smoking hand-rolled cigarettes. Hand-rolled cigarettes are less frequently used among current smokers in Bratislava than in Kosice, Presov, Trencin and Nitra. Similarly, hand-rolled cigarettes were less frequently used in Trnava than in Zilina, Trencin, Presov and Kosice regions.

Table 1B: Percent of students who use other tobacco products, SLOVAKIA, GYTS, 2003

Category	Other Tobacco Products – Total	Cigars	Pipe	Any Current Tobacco Use – Cigarettes + Other
<b>Total</b>	12.8 (± 1.5)	11.7 (± 1.5)	4.1 (± 0.9)	25.3 (± 2.0)
<b>Sex</b>				
Boy	13.9 (± 2.3)	12.3 (± 2.1)	4.7 (± 1.4)	26.6 (± 2.8)
Girl	11.2 (± 1.8)	10.5 (± 1.7)	3.0 (± 0.9)	23.3 (± 2.3)
<b>Region</b>				
Trnava	7.7 (± 2.2)	6.4 (± 2.2)	2.7 (± 1.7)	21.0 (± 3.8)
Zilina	8.2 (± 6.0)	17.0 (± 6.5)	6.3 (± 3.3)	30.1 (± 9.9)
Trencin	12.2 (± 5.5)	10.9 (± 5.3)	3.5 (± 1.7)	24.6 (± 6.5)
Nitra	12.0 (± 3.2)	11.1 (± 2.3)	4.0 (± 1.8)	26.4 (± 1.4)
Presov	15.4 (± 5.1)	13.9 (± 4.3)	5.0 (± 2.9)	29.3 (± 4.8)
Bratislava	12.0 (± 2.5)	10.9 (± 3.1)	3.2 (± 3.5)	26.5 (± 5.8)
B. Bystrica	13.3 (± 3.4)	12.1 (± 3.5)	3.2 (± 2.3)	25.1 (± 4.5)
Kosice	9.6 (± 2.2)	9.0 (± 2.5)	3.4 (± 0.7)	18.0 (± 2.3)

Slightly over 1 in 10 (12.8%) pupils reported use any any other tobacco products than cigarettes (Table 1B). The most popular product was cigars (11.7%), followed by pipe smoking (4.1%) In Presov Region pupils used other tobacco products approximately two times more frequently than in Trnava Region. Cigar smoking is relatively more prevalent in Zilina, Presov, and Nitra than in

Trnava Region. Putting together cigarettes and other tobacco products, more than one-quarter of all respondents were current users of tobacco.

### *Smoking dependency and susceptibility to smoke*

Table 1C: Percent of students reporting smoking dependency and susceptibility, SLOVAKIA, GYTS, 2003

Category	Percent of current smokers who always have or feel like having a cigarette first thing in the morning	Percent of never smokers likely to initiate smoking during the next year
<b>Total</b>	11.8 (± 3.2)	22.9 (± 3.1)
<b>Sex</b>		
Boy	12.5 (± 4.7)	19.7 (± 3.3)
Girl	10.4 (± 3.7)	24.8 (± 4.3)
<b>Region</b>		
Trnava	11.0 (± 3.4)	23.4 (± 5.1)
Zilina	10.2 (± 9.4)	19.6 (± 7.4)
Trencin	9.6 (± 2.7)	34.2 (± 12.1)
Nitra	21.0 (± 15.4)	25.0 (± 13.1)
Presov	11.1 (± 3.1)	17.5 (± 4.2)
Bratislava	9.7 (± 2.8)	23.4 (± 13.5)
B. Bystrica	11.7 (± 6.7)	21.5 (± 4.9)
Kosice	9.8 (± 7.4)	20.3 (± 5.8)

Over 1 in 10 current smokers (11.8%) indicate they showed signs of smoking dependency (desiring a cigarette first thing in the morning) and more than one-fifth of never smokers (22.9%) indicate they are likely to initiate smoking during the next year (Table 1C). In Presov Region significantly lower number of pupils are likely to initiate smoking than in Trencin Region.

### *School curriculum*

Table 2: School Curriculum, SLOVAKIA, GYTS, 2003

Category	During past school year, percent had class where taught dangers of smoking	During past school year, percent had class where discussed reasons why people their age smoke	During past school year, percent had class where taught about the effects of smoking
<b>Total</b>	69.4 (± 2.8)	55.3 (± 2.5)	60.7 (± 3.2)
<b>Sex</b>			
Boy	67.5 (± 3.3)	53.4 (± 2.9)	59.2 (± 3.6)
Girl	72.2 (± 3.1)	57.5 (± 2.9)	62.8 (± 3.6)
<b>Region</b>			
Trnava	67.1 (± 14.9)	49.6 (± 13.4)	56.4 (± 13.7)
Zilina	68.7 (± 2.2)	56.6 (± 8.5)	59.1 (± 6.3)
Trencin	64.9 (± 8.4)	47.6 (± 5.8)	52.9 (± 6.7)
Nitra	66.5 (± 8.3)	49.8 (± 4.5)	54.5 (± 14.1)
Presov	70.4 (± 6.8)	55.9 (± 7.1)	63.2 (± 8.3)
Bratislava	65.2 (± 5.6)	56.9 (± 5.9)	66.1 (± 4.8)
B. Bystrica	74.1 (± 9.7)	60.9 (± 6.9)	60.6 (± 8.0)
Kosice	75.6 (± 6.4)	62.9 (± 1.7)	70.9 (± 4.4)

Almost 7 in 10 of pupils reported having a class during the past school year that about the dangers of smoking (69.4%), 60.7% had a class that taught about the effects of smoking, and 55.3% had a class in which the reasons why people their age smoke was discussed (Table 2). In Kosice Region significantly higher number of pupils had class on reasons why people their age smoke than in

Trencin and Nitra. Similarly, in Kosice Region more pupils had class where taught about the effects of smoking than in Trencin.

### *Cessation*

Table 3: Cessation, SLOVAKIA, GYTS, 2003

Category	Current Smokers		
	Percent desire to stop	Percent tried to stop this year	Received Help/Advice to Stop Smoking
<b>Total</b>	64.0 ( $\pm$ 4.4)	80.8 ( $\pm$ 3.2)	71.9 ( $\pm$ 3.2)
<b>Sex</b>			
Boy	61.7 ( $\pm$ 4.9)	79.8 ( $\pm$ 3.6)	68.6 ( $\pm$ 3.5)
Girl	66.0 ( $\pm$ 8.8)	80.8 ( $\pm$ 4.5)	74.8 ( $\pm$ 4.6)
<b>Region</b>			
Trnava	61.7 ( $\pm$ 14.2)	88.9 ( $\pm$ 9.6)	68.4 ( $\pm$ 14.0)
Zilina	66.5 ( $\pm$ 6.8)	83.6 ( $\pm$ 4.1)	68.8 ( $\pm$ 6.4)
Trencin	68.5 ( $\pm$ 8.9)	70.2 ( $\pm$ 13.3)	69.6 ( $\pm$ 7.0)
Nitra	61.2 ( $\pm$ 14.4)	74.0 ( $\pm$ 14.0)	68.3 ( $\pm$ 7.5)
Presov	66.6 ( $\pm$ 4.3)	80.1 ( $\pm$ 4.3)	80.5 ( $\pm$ 5.6)
Bratislava	56.8 ( $\pm$ 20.4)	82.6 ( $\pm$ 8.2)	71.8 ( $\pm$ 18.3)
B. Bystrica	64.7 ( $\pm$ 22.3)	86.6 ( $\pm$ 3.5)	74.1 ( $\pm$ 7.7)
Kosice	62.9 ( $\pm$ 12.7)	83.8 ( $\pm$ 7.3)	68.7 ( $\pm$ 8.8)

More than 6 in 10 current smokers desired to quit smoking (64.0%) and 80.8% tried unsuccessfully quit this year (Table 3). Over 7 in 10 current smokers reported that they have received help and/or advice to stop smoking (Table 3).

# *Environmental tobacco smoke (ETS)*

Table 4A: Environmental Tobacco Smoke, SLOVAKIA, GYTS, 2003

Category	Exposed to smoke in their home		Exposed to smoke from father in their home		Exposed to smoke from mother in their home		Exposed to smoke from sister/brother in their home		Exposed to smoke from best friend in their home		Exposed to smoke from others in their home	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers
<b>Total</b>	68.5 (± 2.9)	90.9 (± 1.8)	40.0 (± 3.1)	61.2 (± 3.4)	27.1 (± 2.5)	50.4 (± 3.4)	8.7 (± 1.3)	44.3 (± 3.4)	8.2 (± 1.9)	39.7 (± 3.4)	58.2 (± 2.7)	79.9 (± 2.9)
<b>Sex</b>												
Boy	65.8 (± 3.5)	89.4 (± 2.8)	38.1 (± 4.2)	60.7 (± 5.1)	27.3 (± 3.2)	47.8 (± 4.7)	8.4 (± 2.0)	43.3 (± 3.4)	8.8 (± 2.3)	39.6 (± 5.5)	53.5 (± 3.9)	77.8 (± 4.5)
Girl	70.3 (± 4.0)	92.5 (± 2.2)	41.3 (± 4.1)	60.6 (± 4.9)	26.8 (± 3.1)	52.5 (± 4.3)	8.8 (± 2.0)	44.4 (± 5.4)	7.6 (± 2.4)	39.9 (± 4.0)	61.4 (± 3.5)	81.4 (± 3.6)
<b>Region</b>												
Trnava	73.6 (± 5.6)	89.9 (± 5.2)	40.8 (± 8.3)	61.3 (± 15.7)	33.2 (± 2.3)	49.6 (± 10.3)	7.3 (± 4.9)	55.2 (± 10.8)	6.0 (± 1.2)	30.6 (± 10.8)	65.9 (± 2.1)	81.7 (± 5.8)
Zilina	69.5 (± 3.2)	93.9 (± 3.6)	42.2 (± 5.8)	55.4 (± 11.7)	17.4 (± 5.3)	45.9 (± 8.1)	7.4 (± 4.5)	44.5 (± 7.1)	7.8 (± 2.4)	42.0 (± 4.9)	57.1 (± 3.6)	79.8 (± 7.8)
Trencin	63.4 (± 8.8)	84.4 (± 6.6)	39.9 (± 7.7)	54.0 (± 7.4)	26.2 (± 9.8)	45.8 (± 9.2)	11.4 (± 1.4)	36.0 (± 8.7)	8.2 (± 3.8)	41.7 (± 5.9)	51.4 (± 6.7)	72.9 (± 7.7)
Nitra	70.4 (± 9.2)	96.0 (± 2.8)	41.8 (± 8.2)	65.7 (± 3.2)	28.8 (± 9.9)	51.8 (± 10.5)	6.8 (± 2.4)	42.2 (± 11.0)	10.6 (± 8.6)	38.5 (± 8.0)	64.7 (± 6.4)	89.9 (± 4.6)
Presov	70.9 (± 7.5)	89.4 (± 2.6)	43.9 (± 6.7)	59.5 (± 7.4)	25.6 (± 5.4)	51.9 (± 7.7)	7.6 (± 3.6)	47.7 (± 9.3)	8.6 (± 4.5)	42.0 (± 8.5)	59.0 (± 9.9)	81.3 (± 3.8)
Bratislava	66.8 (± 9.5)	94.7 (± 6.0)	34.4 (± 11.9)	71.2 (± 12.6)	30.0 (± 10.4)	57.2 (± 9.3)	8.0 (± 4.2)	51.0 (± 9.0)	8.4 (± 8.1)	33.0 (± 18.8)	55.1 (± 4.1)	80.4 (± 8.9)
B. Bystrica	71.0 (± 10.0)	90.4 (± 7.4)	40.1 (± 11.5)	65.2 (± 9.8)	34.4 (± 5.4)	55.7 (± 10.7)	15.3 (± 5.1)	38.5 (± 6.4)	10.3 (± 6.3)	43.7 (± 9.7)	60.3 (± 9.8)	78.1 (± 13.2)
Kosice	63.3 (± 7.8)	86.9 (± 6.7)	36.3 (± 9.2)	61.5 (± 6.6)	23.4 (± 1.8)	46.4 (± 5.1)	6.9 (± 3.7)	38.4 (± 13.0)	5.9 (± 4.3)	41.4 (± 10.7)	53.6 (± 6.7)	72.1 (± 7.0)

Current smokers were significantly more likely than never smokers to be exposed to smoke from others in their home: from fathers (61.2% vs 40.0%), from mothers (50.4% vs 27.1%), from sister/brother (44.3% vs 8.2%), and from others (79.9% vs 58.2%) (Table 4A). This difference held by gender and region for all comparisons.

Table 4B: Environmental Tobacco Smoke, SLOVAKIA, GYTS, 2003

Category	Exposed to smoke from others in public places		Percent think smoking should be banned from public places		Definitely think smoke from others is harmful to them	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers
<b>Total</b>	77.2 (± 1.6)	91.1 (± 1.6)	92.2 (± 1.4)	45.7 (± 3.7)	76.7 (± 3.7)	53.4 (± 4.7)
<b>Sex</b>						
Boy	76.9 (± 2.9)	90.3 (± 2.7)	91.3 (± 2.6)	47.0 (± 5.2)	76.4 (± 3.4)	55.7 (± 5.1)
Girl	77.7 (± 2.7)	92.4 (± 2.3)	93.2 (± 1.9)	43.5 (± 6.7)	77.0 (± 4.6)	51.6 (± 7.1)
<b>Region</b>						
Trnava	78.3 (± 7.2)	95.6 (± 6.0)	91.0 (± 6.1)	45.3 (± 10.9)	75.4 (± 6.6)	65.3 (± 11.8)
Zilina	79.3 (± 3.7)	91.2 (± 1.8)	94.1 (± 3.3)	45.8 (± 8.3)	81.2 (± 10.0)	58.1 (± 5.3)
Trencin	80.3 (± 1.6)	95.6 (± 3.4)	91.4 (± 3.5)	48.7 (± 10.6)	72.2 (± 13.8)	46.7 (± 10.5)
Nitra	75.9 (± 3.3)	89.2 (± 4.0)	89.0 (± 3.5)	40.1 (± 5.8)	61.6 (± 14.1)	42.5 (± 22.4)
Presov	74.3 (± 5.0)	88.3 (± 4.6)	94.2 (± 1.9)	48.3 (± 10.6)	81.8 (± 4.2)	61.2 (± 9.5)
Bratislava	71.6 (± 7.1)	93.3 (± 4.5)	87.9 (± 6.6)	38.8 (± 18.6)	77.7 (± 2.9)	48.9 (± 9.2)
B. Bystrica	81.1 (± 2.5)	89.3 (± 5.3)	94.5 (± 1.6)	52.6 (± 7.3)	82.0 (± 6.4)	54.1 (± 11.3)
Kosice	76.7 (± 2.9)	89.5 (± 5.4)	93.9 (± 4.0)	44.1 (± 9.7)	81.1 (± 5.1)	46.5 (± 9.3)

Current smokers (91.1%) were significantly more likely than never smokers (77.2%) to be exposed to smoke from others in public places (Table 4B). Never smokers were significantly more likely than current smokers to think smoking should be banned from public places (92.2% vs 45.7%) and that smoke from others is harmful to them (58.8% vs 41.6%). These differences held by gender and region.

### *Knowledge and attitudes*

Table 5: Knowledge and Attitudes, SLOVAKIA, GYTS, 2003

Category	Think boys who smoke have more friends		Think girls who smoke have more friends		Think smoking makes boys look more attractive		Think smoking makes girls look more attractive	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers	Never Smokers	Current Smokers
<b>Total</b>	22.2 (± 2.7)	24.6 (± 3.2)	14.4 (± 2.2)	18.6 (± 3.4)	9.6 (± 1.7)	23.7 (± 3.5)	7.2 (± 1.1)	18.2 (± 2.7)
<b>Sex</b>								
Boy	19.0 (± 3.3)	22.9 (± 3.7)	15.0 (± 2.5)	17.1 (± 4.0)	11.6 (± 2.9)	21.7 (± 3.5)	6.7 (± 1.5)	18.4 (± 3.3)
Girl	24.7 (± 3.5)	25.4 (± 5.1)	13.8 (± 3.0)	19.6 (± 5.2)	7.9 (± 2.1)	25.9 (± 5.6)	7.0 (± 1.6)	17.5 (± 4.1)
<b>Region</b>								
Trnava	18.9 (± 4.7)	15.4 (± 6.8)	12.1 (± 6.6)	8.8 (± 2.7)	10.7 (± 4.0)	13.8 (± 7.0)	6.4 (± 3.6)	11.3 (± 3.6)
Zilina	19.8 (± 5.6)	22.9 (± 6.7)	13.4 (± 10.2)	15.3 (± 8.1)	5.9 (± 3.1)	24.9 (± 12.6)	4.8 (± 2.1)	22.8 (± 7.9)
Trencin	22.1 (± 9.8)	19.7 (± 9.1)	16.2 (± 6.3)	11.7 (± 5.7)	9.8 (± 5.1)	19.7 (± 6.2)	7.6 (± 2.5)	9.8 (± 2.3)
Nitra	22.7 (± 3.6)	24.5 (± 10.6)	13.4 (± 2.8)	15.6 (± 8.5)	14.4 (± 6.5)	33.9 (± 9.5)	8.5 (± 2.6)	23.6 (± 9.9)
Presov	21.1 (± 8.4)	34.3 (± 6.3)	15.7 (± 2.4)	27.3 (± 6.9)	9.1 (± 3.8)	26.7 (± 6.2)	7.5 (± 4.9)	22.7 (± 4.2)
Bratislava	26.0 (± 11.8)	16.9 (± 12.4)	15.2 (± 10.9)	16.0 (± 7.9)	6.4 (± 4.4)	14.5 (± 10.2)	7.3 (± 3.5)	9.7 (± 2.4)
B. Bystrica	26.8 (± 8.3)	23.2 (± 11.2)	15.4 (± 6.7)	23.0 (± 16.9)	9.6 (± 3.9)	25.9 (± 13.8)	6.4 (± 1.7)	14.0 (± 9.5)
Kosice	21.7 (± 6.0)	32.2 (± 6.4)	13.5 (± 3.7)	25.8 (± 10.5)	10.5 (± 2.5)	21.6 (± 9.9)	8.3 (± 1.6)	23.5 (± 11.8)

Less than one-quarter of both never and current smokers think boys who smoke have more friends (Table 5). Less than one-fifth of students think girls who smoke have more friends. The percent of

current smokers who think boys and girls who smoke are more attractive than who do not is significantly higher than for never smokers.

### *Media and Advertising*

Table 6A: Media and Advertising, SLOVAKIA, GYTS, 2003

Category	Percent Saw Anti-Smoking Media Messages on Television	Percent Heard Anti-Smoking Media Messages on Radio	Percent Saw Anti-Smoking Media Messages on Billboards	Percent Saw Anti-Smoking Media Messages on Posters	Percent Saw Anti-Smoking Media Messages in Newspapers or Magazines	Percent Saw Anti-Smoking Media Messages at the Cinema	Percent Saw Anti-Smoking Media Messages at Sports Events, Fairs, Concerts or Community Events
<b>Total</b>	29.5 (± 2.5)	31.8 (± 2.2)	44.1 (± 2.2)	42.7 (± 2.1)	50.7 (± 2.0)	52.3 (± 3.5)	60.6 (± 1.8)
<b>Sex</b>							
Boy	30.7 (± 3.0)	35.2 (± 3.0)	45.5 (± 2.5)	43.3 (± 2.3)	50.4 (± 2.6)	53.7 (± 4.3)	62.6 (± 2.2)
Girl	27.3 (± 3.3)	26.6 (± 2.5)	43.0 (± 2.8)	42.1 (± 2.9)	51.0 (± 2.3)	51.2 (± 5.1)	58.2 (± 2.6)
<b>Region</b>							
Trnava	30.9 (± 5.9)	31.8 (± 5.0)	38.7 (± 11.2)	34.3 (± 10.8)	51.3 (± 9.0)	49.6 (± 19.2)	61.4 (± 9.0)
Zilina	31.5 (± 6.9)	28.0 (± 3.8)	44.5 (± 3.4)	43.7 (± 3.7)	52.3 (± 4.3)	53.9 (± 5.3)	61.4 (± 3.5)
Trencin	31.1 (± 8.7)	25.8 (± 5.7)	43.3 (± 3.5)	42.7 (± 3.9)	50.9 (± 3.6)	56.5 (± 9.6)	62.7 (± 3.3)
Nitra	27.7 (± 3.7)	33.9 (± 5.1)	47.2 (± 6.3)	45.0 (± 8.1)	50.6 (± 1.5)	53.5 (± 12.6)	59.1 (± 3.2)
Presov	30.1 (± 8.9)	34.4 (± 6.8)	45.2 (± 6.6)	44.3 (± 4.8)	49.1 (± 5.2)	59.3 (± 8.3)	60.1 (± 4.1)
Bratislava	23.9 (± 2.4)	35.0 (± 6.6)	44.6 (± 4.0)	41.5 (± 6.2)	44.3 (± 5.6)	30.7 (± 13.5)	58.2 (± 6.4)
B. Bystrica	30.0 (± 5.4)	35.9 (± 8.1)	47.4 (± 5.3)	46.2 (± 4.4)	53.3 (± 9.5)	48.6 (± 6.8)	63.5 (± 5.5)
Kosice	29.5 (± 5.3)	30.2 (± 7.2)	41.3 (± 5.8)	41.9 (± 5.3)	52.8 (± 4.5)	51.6 (± 6.6)	58.4 (± 4.8)

Over 6 in 10 pupils had seen anti-smoking media message at sport events (60.6%), almost half at the cinema (52.3%) and in newspaper magazines (50.7%), and less than half on posters (42.7%), on billboards (44.1%), on radio (31.8%), or on TV (29.5%) (Table 6A). Boys were significantly more likely than girls to hear anti-smoking message on radio. In Bratislava Region respondents reported less frequently seeing anti-smoking messages at the cinema than in Presov, Trencin, Zilina and Kosice.

Table 6B: Media and Advertising, SLOVAKIA, GYTS, 2003

Category	Percent Saw Pro-Tobacco Messages on Television	Percent Saw Pro-Tobacco Messages on Newspapers/Magazines	Percent Saw Pro-Tobacco Messages at Sporting Events	Percent Saw Pro-Tobacco Messages at Cinema	Percent Saw Pro-Tobacco Messages at Community Events/Social Gatherings
<b>Total</b>	77.4 (± 1.2)	74.1 (± 1.6)	68.9 (± 1.7)	56.8 (± 3.0)	58.6 (± 2.3)
<b>Sex</b>					
Boy	79.5 (± 1.6)	74.1 (± 1.8)	69.1 (± 2.3)	57.6 (± 3.9)	60.3 (± 2.9)
Girl	75.3 (± 1.7)	74.2 (± 2.5)	68.2 (± 2.5)	55.4 (± 3.8)	56.4 (± 2.9)
<b>Region</b>					
Trnava	74.1 (± 5.7)	71.7 (± 5.4)	66.4 (± 7.4)	57.1 (± 5.9)	57.2 (± 9.3)
Zilina	76.7 (± 1.9)	75.0 (± 3.1)	70.2 (± 6.2)	58.2 (± 9.7)	61.8 (± 8.3)
Trencin	78.6 (± 2.9)	69.6 (± 4.4)	72.6 (± 3.9)	59.0 (± 9.4)	58.7 (± 4.6)
Nitra	77.8 (± 3.8)	70.3 (± 6.7)	71.7 (± 3.3)	54.3 (± 4.3)	55.8 (± 5.0)
Presov	78.2 (± 2.2)	74.4 (± 3.1)	68.5 (± 4.7)	53.8 (± 6.2)	55.4 (± 2.2)
Bratislava	71.9 (± 4.3)	73.5 (± 6.0)	69.2 (± 5.3)	55.8 (± 6.3)	61.9 (± 7.7)
B. Bystrica	80.8 (± 2.6)	78.4 (± 4.4)	66.9 (± 2.9)	59.3 (± 9.2)	60.7 (± 5.4)
Kosice	78.9 (± 3.8)	78.2 (± 1.9)	66.0 (± 4.2)	56.0 (± 10.7)	58.6 (± 8.0)



Almost 8 in 10 pupils had seen pro-tobacco messages on TV (77.4%), in newspapers or magazines (74.1%), and at sports events (68.9%) (Table 6B). Boys were significantly more likely than girls to see pro-tobacco messages on TV. Almost 6 in 10 pupils had seen pro-tobacco messages at community events (58.6%) or at the cinema (56.8%). Students in Trenčin were significantly less likely to have seen pro-tobacco messages in newspapers/magazines than in Kosice.

Table 6C: Media and Advertising, SLOVAKIA, GYTS, 2003

Category	Percent Who Had Object With a Cigarette Brand Logo On It		Percent Offered AFree® Cigarettes by a Tobacco Company	
	Never Smokers	Current Smokers	Never Smokers	Current Smokers
<b>Total</b>	16.8 (± 2.3)	37.9 (± 4.5)	5.1 (± 1.0)	13.1 (± 3.1)
<b>Sex</b>				
Boy	19.6 (± 3.9)	37.8 (± 4.5)	6.4 (± 1.9)	13.6 (± 3.8)
Girl	14.8 (± 2.6)	38.3 (± 6.1)	3.8 (± 0.9)	12.2 (± 4.1)
<b>Region</b>				
Trnava	14.0 (± 5.7)	48.4 (± 15.4)	5.2 (± 3.3)	14.2 (± 5.6)
Zilina	12.5 (± 3.5)	29.9 (± 5.4)	6.2 (± 2.3)	13.0 (± 3.5)
Trenčin	13.9 (± 3.9)	30.9 (± 14.7)	6.0 (± 2.6)	8.5 (± 3.4)
Nitra	18.4 (± 5.5)	43.6 (± 23.2)	5.8 (± 2.7)	19.9 (± 14.8)
Presov	14.2 (± 7.6)	33.9 (± 6.5)	6.1 (± 4.2)	13.0 (± 6.4)
Bratislava	15.6 (± 6.2)	30.9 (± 4.9)	2.7 (± 2.3)	3.2 (± 4.5)
B. Bystrica	24.2 (± 10.8)	49.2 (± 7.4)	4.7 (± 2.1)	16.4 (± 3.5)
Kosice	20.8 (± 5.0)	44.2 (± 7.0)	3.5 (± 2.3)	14.2 (± 5.7)

Current smokers (37.9%) were significantly more likely than never smokers (16.8%) to have an object with a cigarette brand logo on it, a difference that held by gender and region (Table 6C). Current smokers (13.1%) were significantly more likely than never smokers (5.1%) to have been offered free cigarettes by representatives of a tobacco company. Among current smokers, respondents in Banská Bystrica were more frequently offered free cigarettes than in Trenčin and Bratislava. On the other hand, current smokers in Bratislava were less frequently offered free cigarettes than in Kosice, Trnava and Zilina Regions.

### *Access and Availability*

Table7: Access and Availability, SLOVAKIA, GYTS, 2003

Category	Percent Current Smokers who Usually Smoke at Home	Percent Current Smokers who Purchased Cigarettes in a Store	Percent Current Smokers Who Bought Cigarettes in a Store Who Were Not Refused Because of Their Age
<b>Total</b>	6.9 (± 1.7)	54.0 (± 3.8)	78.9 (± 5.7)
<b>Sex</b>			
Boy	8.0 (± 3.1)	57.2 (± 4.5)	76.9 (± 6.3)
Girl	4.9 (± 1.6)	50.0 (± 6.3)	82.6 (± 9.7)
<b>Region</b>			
Trnava	5.1 (± 5.8)	67.1 (± 11.8)	89.8 (± 13.6)
Zilina	5.3 (± 1.5)	49.7 (± 9.2)	83.8 (± 10.1)
Trenčin	5.2 (± 3.4)	61.0 (± 6.8)	84.4 (± 5.4)
Nitra	3.7 (± 4.8)	45.6 (± 11.8)	60.8 (± 28.6)
Presov	8.5 (± 4.3)	50.1 (± 12.0)	75.5 (± 6.6)
Bratislava	5.4 (± 1.5)	61.8 (± 6.0)	90.9 (± 8.1)
B. Bystrica	10.9 (± 5.3)	56.4 (± 11.7)	78.0 (± 11.5)
Kosice	11.5 (± 8.3)	49.0 (± 5.1)	65.4 (± 11.9)

Less than 1 in 10 current smokers (6.9%) reported usually smoking at home. More than a half of current smokers (54.0%) purchased cigarettes in a store, with the level significantly lower in Kosice

than in Trnava, Trenčin and Bratislava Regions. Almost 8 in 10 current smokers were not refused while buying cigarettes because of their age. In answers of this question, regional differences have been found between Bratislava and Presov and between Trenčin and Košice Regions (in Bratislava and Trenčin the percent not refused was significantly higher than in the other regions).

## **Discussion**

### ***Prevalence of smoking and use of tobacco (Tables 1A and 1B)***

According to our findings, among children in Slovakia in smoking initiation still predominate boys. It reflects traditional attitudes of low social tolerance of women's smoking. However, compared to previous studies (5, 17), this difference is smaller than several years ago and indicates the potential increase of smoking among girls and disappearance of sex differences. Beside this, found difference in prevalence of any smoking experience (app. 10%), taking into consideration absolute values (more than one half) is not significant from aspect of public health and preventive measures should be focused both to boys and girls. This attitude is supported by only slight difference between current smoking of boys and girls (Table 1A). Our results also indicate, that in the given age groups besides primary also secondary prevention is already important – almost one-quarter of kids needs some form of intervention focused on smoking cessation. Manufactured cigarettes strongly predominate, however, almost one-fifth of current smokers use also hand-rolled cigarettes, which should be kept in mind in preventive measures. Regional differences both in smoking initiation and usage of hand-rolled cigarettes may be at least partially caused by specific situation determined by social, economic, cultural, ethnical and geographical factors.

From other tobacco products, cigars are used the most frequently. It can reflect youngsters' affords to be cool, since cigars have been traditionally symbol of upper economic classes and high social self-esteem (13). However, because of relatively high prices of cigars, we cannot expect cigar smoking as a potential serious public-health problem. This opinion can be supported also by a fact, that there is only slight difference between prevalence of current cigarette smoking and any current tobacco use (compare Tables 1A and 1B). It means, that the most of current smokers use cigarettes and cigars are smoked only occasionally. On the other hand, cigars can play a role during smoking initiation as a gate to other form of tobacco (9, 13).

### ***Smoking dependency and susceptibility to smoke (Table 1C)***

If we assess the mood for smoking in the morning as an important sign of nicotine addiction (10, 19), the survey showed in almost 12% of current smokers dependency on nicotine (Table 1C). However, this proportion is clearly lower than in adult population (15), should be considered very negatively in this age group. Our attention deserves also almost 23% of never smokers susceptible to smoke during the next year (Table 1C). These potential smokers are most important target group for primary prevention. Further deep analysis of their attitudes and factors influencing smoking initiation would be of a great importance in planning of intervention measures. If they become smokers, proportion of current smokers in this target group could be almost doubled reaching almost 50% of the population.

### ***School curriculum (Table 2)***

According to our results, teaching on tobacco has been established in a majority of classes. However, according to pupils' reports, in these classes greater attention is paid on health effects of smoking than factors influencing smoking initiation and continuing. Several studies evidenced, that giving information on effects of smoking are not satisfactory effective among youngsters (6, 12, 18). In school curricula attention should be paid not only to adequate quantity of classes dealing with health promotion and prevention, but also to their appropriate content. Such classes should be based particularly on changes of attitudes and assertivity skills. Health effects should be discussed only partially, focusing namely on short-term consequences and cosmetic aspects, (particularly among girls) (11).

### ***Cessation (Table 3)***

Proportion of current smokers in our sample desiring to quit is comparable with numbers found in adult population. This corresponds with a high proportion of smokers trying unsuccessfully to quit. Taking into consideration relatively low prevalence of nicotine dependency among the current smokers (Table 1C), the main reasons of failure should be different from tobacco addiction (which is the major reason in adult smokers (3, 16)) and can include particularly psychological and social factors such as lack of assertivity, peer-pressure, positive attitudes towards smoking etc. Latter mentioned facts indicate, that measures focused on this target group should also include appropriate smoking cessation programs, however, different from those for adults. High proportion of current smokers helped and/or advised to stop smoking may also indicate, that such advise or help, anyway quite frequent, is not satisfactory effective and pupils continue their smoking.

### ***Environmental tobacco smoke (ETS) (Table 4A and 4B)***

The survey showed a clear association between ETS and smoking of respondents (Table 4A). The relationship is particularly obvious considering the smoking of brother and/or sister and smoking of friends. This finding underlines the social roots of smoking habit. Thus, ETS cannot be considered negatively only from biological aspects as passive smoking, but also from social aspect – children very sensitively perceive behavioural schemes of people in their environment which strongly determines their smoking status and attitudes. Fact, that much more than a half of children are exposed to cigarette smoke in their homes, should be considered very unfavourably and the current situation in this field need effective measures. Similarly, more than 3 in 4 children are exposed to smoke from others in public places, which indicates that even some legislative norms in this field have been approved, we need strongly either more strict legislative norms or executive policies to keep existing ones. Significant differences between current smokers and never smokers also emphasise the role of social environment in determining of smoking status. Similarly, attitudes towards restriction policy and ETS are clearly associated with current smoking status. It means, that legislative process in this field should be accompanied by appropriate information campaigns and mass media programs to change the attitudes. Anyway, even approximately one half of current smokers could welcome more effective policies for prevention of ETS (Table 4B).

### ***Knowledge and attitudes (Table 5)***

Our findings indicate, that one of the important reasons for smoking in youngsters are efforts to be attractive. This should be reflected in the preventive programs for school children.

According to reports of respondents, anti-smoking messages are the most frequently perceived in the social gatherings such as sport events, fairs, concertos etc. Also cinema and journal seem to be effective. Relatively, the least effective in anti-smoking campaigns are radio and TV. Differences between boys and girls regarding the role of radio and some regional differences regarding the role of cinema can be caused by different behaviour and ways of spending of a free time of youngsters (Table 6B). Very high numbers of pupils reporting seeing pro-tobacco messages in mass media represent a burning question in tobacco control. Considering fact, that according to existing legislation in Slovakia are all forms of tobacco advertisement totally banned in mass media, our findings indicate either ineffective executive policy enabling to trespass the legislation or the important role of indirect forms of advertisement (Table 6B). Found regional differences (Trencin compared to Kosice) in seeing of pro-tobacco messages in newspapers and/or magazines can be partially explained by either different social, economical and cultural differences or by various level of tobacco-related attitudes of regional journals and newspapers.

### ***Media and Advertising (Table 6A, 6B and 6C)***

Association between distributing of various items by tobacco companies and current smoking status underline that such sale promotion actions address effectively youngsters and more effective legislation in this field is needed. Although number of pupils offered by free cigarette samples

seems relatively low, taking into consideration total ban of such form of sale promotion, it clearly evidences for violation of legislation by tobacco companies representatives. Found regional differences can be explained the most probably by various activity of tobacco companies representatives in these regions.

### ***Access and Availability (Table 7)***

Relatively small proportion of current smokers smoking at home indicates rather low level of tolerance of children' smoking by their parents. It can be considered positively, particularly from the aspect of social acceptance of tobacco control measures focused on youngsters. As in previous findings, our results evidence for dramatic violation of law regarding restricting of minors sale, since current legislation totally bans sale of tobacco products for youngsters under the age of 18. Found regional differences can be explained at least partially by various social environment and economic conditions in these regions.

### **Implications for practice**

Results of GYTS Slovakia, 2002 indicate to some epidemiological features of smoking in the studied population from which some conclusions regarding prevention can be derived:

- Considering progressively increasing trend in smoking among girls in the studied population, tobacco control programs specifically focused for this target group should be implemented.
- Tobacco control measures in school children beside primary prevention should include also smoking cessation program. However, this program should be predominantly based on psychological and social aspects of cessation (motivation for quitting, peer pressure, assertive behaviour, alternatives for smoking etc.) but also occurrence of actual nicotine addiction in the given target group should be kept in mind.
- In teaching on tobacco, working out of curricula with the appropriate content (mainly focused on changes of attitudes and social aspects of children' smoking) would be helpful. Beside this, teachers should be specifically educated in this field (how to teach on tobacco).
- The survey clearly showed the need for more efficient policies in environmental tobacco smoke. From this aspect, it should be mentioned, that currently in Slovakia no legislation norm touches passive smoking of children, caused by smoking of their parents and other relatives.
- Results showed an urgent need to develop more effective executive policies for already existing legislation including effective competencies for supervision bodies as well as higher penalties. Formulations in some legislative norms enable inappropriate interpretation making them ineffective. This should be kept in mind in their amendment.

### **Suggestions for further research:**

- Children susceptible to smoking during the next year are of particular importance. Deep analysis of their attitudes and factors influencing smoking initiation and ways of their effective modification should be studied.
- Further analysis of found regional differences can help in looking for general features of epidemiology of smoking and factors influencing its initiation and development of smoking habit.
- Considering a relatively high occurrence of signs of nicotine dependence in the target group (almost 12% of current smokers), further research focused on potential use of both nicotine replacement therapy and bupropion in children would be important from this aspect.
- Implemented school programs for tobacco control should be evaluated, especially from aspect of their long-term effects. Also, evidence based curricula adopted for specific conditions, should be developed.

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